Claims

[c1]   What is claimed is:

1.A method of adjusting positions of dots in an original halftone image for improving quality of printed images, the original halftone image comprising a plurality of pixels containing either dots to be printed or blank spaces, the method comprising:

selecting a pixel in the original halftone image containing a selected dot to be printed;

analyzing pixels in the original halftone image neighboring the selected pixel to determine if the neighboring pixels contain dots to be printed;

adjusting the position of the selected dot in the selected pixel to increase an average distance between the selected dot and the dots in the neighboring pixels; and

creating a modified halftone image in which the position of selected dot has been adjusted.

[c2]   2.The method of claim 1 wherein analyzing the pixels neighboring the selected pixel comprises analyzing eight neighboring pixels surrounding the selected pixel.

[c3]   3.The method of claim 1 wherein adjusting the position of the selected dot in the selected pixel comprises ad-

justing the position of the center of the selected dot in the selected pixel.

[c4] 4.The method of claim 3 wherein adjusting the position of the selected dot in the selected pixel comprises dividing each pixel into sub-pixels and moving the center of the selected dot to one of the sub-pixels.

[c5] 5.The method of claim 4 wherein a plurality of sub-pixels located in an interior section of the selected pixel are chosen to be included in a positioning window, and adjusting the position of the selected dot in the selected pixel comprises moving the center of the selected dot to one of the sub-pixels located in the positioning window.

[c6] 6.The method of claim 1 further comprising providing a continuous original image corresponding to the original halftone image, locating an original selected pixel in the continuous original image corresponding to the selected pixel of the original halftone image, calculating color variance of pixels neighboring the original selected pixel, and only adjusting the position of the selected dot in the modified halftone image if the color variance is lower than a predetermined value.

[c7] 7.The method of claim 1 further comprising assigning a number to each of the neighboring pixels and consulting

a lookup table to adjust the position of the selected dot in the selected pixel according to the presence of dots in each of the neighboring pixels.

[c8] 8. The method of claim 1 wherein the position of the selected dot in the selected pixel is adjusted to maximize the average distance between the selected dot and the dots in the neighboring pixels.

[c9] 9. The method of claim 1 being implemented in a printer.

[c10] 10. The method of claim 1 being implemented in a facsimile machine.

[c11] 11. The method of claim 1 being implemented in a copier.